Listing of the Claims

1. (Currently Amended)   A~~n~~ apparatus for performing Orthogonal Polarized Spectral Imaging (OPSI) for imaging objects below the surface of diffuse scattering media, ~~in particular blood capillaries in organs such as the skin of human beings,~~ comprising ~~inter alia at least~~ a light source (1) for providing polarized light, an imaging device (12), a beam splitter (6), a focusing device (7), and means for imaging the object at two different imaging angles.

2. (Currently Amended)   The apparatus ~~Apparatus~~ according to claim 1, ~~characterized in that~~ wherein the means for imaging the object is formed by two objectives having different imaging angles.

3. (Currently Amended)   ~~Apparatus~~ The apparatus according to claim 1, ~~characterized in that~~ wherein the means for imaging the object is formed by a ~~single~~ main objective (7), a scanning mirror (16), and at least one of a rotating wedge ~~or~~ and two shifting wedges for shifting ~~the~~ an imaging beam ~~in its~~ path from the polarizing beam splitter (6) to the imaging device (12).

4. (Currently Amended)   ~~Apparatus~~ The apparatus according to claim 1, ~~characterized in that~~ wherein a separate imaging device (12) is provided for each image.

5. (Currently Amended)   ~~Apparatus~~ The apparatus according to claim 4, ~~characterized in that~~ wherein a shutter is provided for transmitting each of the two images in alternation.

6. (Currently Amended)   ~~Apparatus~~ The apparaatus according to claim 5, ~~characterized in that~~ wherein the shutter is located between the polarizing beam splitter (6) and the imaging device (12).

7. (Currently Amended)   ~~Apparatus~~ The apparatus according to claim 5, ~~characterized in that~~ wherein the shutter is one of a rotating- aperture shutter and a liquid crystal cell shutter.

8. (Cancelled)

9. (Currently Amended) Apparatus The apparatus according to claim 1, characterized in that wherein the two imaging angles differ by at least approximately 10 to 30 degrees.

10. (Currently Amended) Apparatus according to claim 1, characterized in that wherein the imaging devices are one of CCD-cameras, CMOS-sensors, and a combination of CCD-cameras and CMOS-sensors.

11. (Cancelled)

12. (Currently Amended) Apparatus The apparatus according to claim 1, characterized in further comprising a data processor for determining a position of the object, the position including at least information about the z-axis which is parallel to the optical axis.

13. (Currently Amended) Apparatus The apparatus according to claim 12, characterized in further comprising a spectroscopic analysis system, with a spectroscopic light source and a spectroscopic light beam positioning device for directing the spectroscopic light beam to the object in dependence of the position of the object determined by the data processor.

14. (Currently Amended) A method for detection of objects below the surface of diffuse scattering media, in particular blood capillaries in organs such as the skin of human beings, using Orthogonal Polarized Spectral Imaging (OPSI), comprising the steps of: imaging the object in question at at least two different angles so as to obtain a shift of position in the an imaging plane; and comparing relative shifts of objects determining a shift in the object imaged at the two different angles two images so as to obtain coordinates of the imaged object with respect to the organ surface.

15. (Currently Amended) Method The method according to claim 14, characterized in that wherein it is determined on the basis of the a direction of the shift determines whether the imaged object is above or below the a focal plane.

16. (Currently Amended) ~~Method~~ The method according to claim 14, ~~characterized in that wherein~~ ~~the~~ a distance between the object and ~~the~~ a focal plane is calculated from the size of the shift.

17. (Currently Amended) ~~Method~~ The method according to claim 14, ~~characterized in that wherein~~ the two imaging angles ~~is chosen to be between~~ differ by at least approximately 10 ~~and 30~~ degrees.

18. (Cancelled)

19. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that wherein~~ part of the objective (7) is illuminated with a parallel beam so as to obtain the at least two images.

20. (Currently Amended) ~~Method~~ The method according to claim 18, ~~characterized in that wherein~~ the entire objective (7) is illuminated at a defined angle so as to obtain the at least two images.

21. (New) A blood analysis system comprising:

a light source for providing polarized light directed toward an object,

means for imaging the object at two different imaging angles to obtain a shift of position in an imaging plane; and

means for determining a shift of the object imaged at the two different angles so as to obtain coordinates of the imaged object.

22. (New) The blood analysis system of claim 21, wherein a direction of the shift determines whether the imaged object is above or below a focal plane.

23. (New) The blood analysis system of claim 21, wherein a distance between the object and a focal plane is calculated from the size of the shift.